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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,714	02/01/2006	Kuniaki Ishibashi	053565	8972

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EXAMINER	
HON, SOW FUN	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/566,714	ISHIBASHI ET AL.
	Examiner	Art Unit
	SOPHIE HON	1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/02/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-19* is/are pending in the application.

4a) Of the above claim(s) *18 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/14/08,5/21/08*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 18-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/02/08.

Response to Amendment

Withdrawn Rejections

2. The 35 U.S. 102(b) rejection of claims 1, 3-4 as being anticipated by Hosonuma (US 4,643,529) which was incorrectly cited as US 4,392,642 in the prior Office action, is withdrawn due to Applicant's amendment dated 4/02/08.

3. The 35 U.S.C. 103(a) rejections of claims 5-16 over the primary reference of Hosonuma are withdrawn due to Applicant's amendment dated 4/02/08.

New Rejections

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosonuma (US 4,643,529).

Regarding claims 1, 3, Hosonuma teaches a polarizing film (column 6, line 30) comprising: a polymer film (unoriented film formed in Example 1, column 6, lines 10-15),

and a dichroic substance (photodichroic dye, column 5, lines 10-11) wherein the polarizing film is produced by stretching the long polymer film in the TD direction (transversely, column 6, lines 20-25), and thus inherently has an absorption axis in the TD direction of the polarizing film as evidenced by Applicant's specification (the step of stretching the long film in the widthwise direction aims at providing an absorption axis in the widthwise direction of the long film, page 10). It is noted that although Hosonuma does not disclose that the polymer film is a long film, Hosonuma teaches that the film travels in the machine direction (column 6, lines 10-20), with an ink mark that is 100 mm long, imprinted on the film in the machine direction (column 6, lines 12-15), in order to determine the longitudinal shrinkage of the long polymer film after stretching in the transverse direction (in the polarizing film thus obtained, the mark had a length of 55 mm and hence a shrink ratio of 45%, column 6, lines 30-32). This means that the length of the polymer film in the machine direction is continuous or automated production length, which translates into "long". Hosonuma fails to specify that the length in the MD direction of the polarizing film is not smaller than five times as long as the length in the TD direction of the polarizing film.

However, Hosonuma teaches that a piece of the machine-sized film was cut with dimensions wherein the long length is 50 mm and the wide length is 20 mm, and the piece is longitudinally stretched by a ratio of 3.5 (column 5, lines 17-25), which means that the resultant stretched length in the long direction is 175 mm. While Hosonuma is silent as to whether the long length is still the MD direction length and the wide length is still the TD direction length, this case is an obvious choice due to the similarity in

dimensional proportions. Thus even if the wide length, and hence the designated length in the TD direction did not shrink as a result of the longitudinal stretching of the piece of film, the final long length, and hence the designated length in the MD direction, is still not smaller than 5 times as long as the designated length in the TD direction of the polarizing film, for the purpose of providing the desired orientation and hence polarization (column 1, lines 45-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have formed the polarizing film of Hosonuma, from a piece of the original film where the long length is still the MD direction length and the wide length is still the TD direction length, such that the length in the MD direction of the polarizing film is not smaller than five times as long as the length in the TD direction of the polarizing film, in order to obtain the desired orientation and hence polarization, as taught by Hosonuma.

Regarding claim 4, Hosonuma teaches that the polarizing film is produced by stretching the long polymer film in the TD direction with the stretching ratio of 4.5 times as long as the original width (stretched transversely, column 6, lines 20-24), which is within the claimed range of 1.1 to 20 times. Hosonuma teaches shrinking the long polymer film in the MD direction with the shrinking ratio of 45% as long as the initial length (where the film is transversely stretched, this should be carried out while allowing the film to shrink, column 3, lines 27-30, unoriented film imprinted with a longitudinal mark 100 mm long, column 6, lines 11-14, polarizing film obtained had a length of 55

mm, shrink ratio of 45%, column 6, lines 30-32). Thus Hosonuma fails to teach a shrinking ratio in the MD direction that is within the range of 70 to 99%.

However, Hosonuma teaches that the shrinking ratio is equal to the square root of the stretch ratio (column 3, lines 25-30) and that the polarizing power is enhanced as its degree of orientation and hence stretching is higher (column 1, lines 50-55), thus establishing the shrinking ratio in the MD direction as a result-effective variable which increases as the stretch ratio in the TD direction increases, for the purpose of providing the desired polarizing power to the polarizing film.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the shrinking ratio in the MD direction of the polarizing film of Hosonuma, from 45% to one that is within the range of 70 to 99% as long as the initial length, in order to obtain the desired orientation and hence polarizing power in the TD direction, as taught by Hosonuma.

Regarding claims 5-7, Hosonuma teaches that the polarizing film is produced by dyeing the long polymer, which is stretched in the TD direction, and shrunk in the MD direction, as described above, with a dichroic substance by applying a solution containing the dichroic substance onto the polymer film (soaking it in a solution of the photodichroic material, column 3, lines 1-5). Hosonuma teaches the use of a specific dichroic dye in the examples, and thus fails to teach iodine as the dichroic substance.

However, Hosonuma teaches that iodine can be substituted for the dichroic dye as the dichroic substance in the polarizing film (column 1, lines 34-40) for the purpose of providing high polarization (column 1, lines 22-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used iodine in place of the dichroic dye as the dichroic substance in the polarizing film, in order to provide high polarization, as taught by Hosonuma.

Hosonuma fails to disclose that the solution is an aqueous solution, or that the long polymer is stretched and shrunk prior to dyeing. However, even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP 2113. In the instant case, the product is the iodine-dyed stretched and shrunk polymer film.

5. Claims 8-10, 12, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosonuma as applied to claims 1, 3-7 above, and further in view of Yoshida (US 2001/0030726).

Hosonuma teaches the polarizing film discussed above. In addition, Hosonuma teaches that the polarizing film has a high degree of polarization (abstract).

Regarding claims 8, 17, Hosonuma teaches that the polarizing film is used in a liquid crystal display (column 1, lines 8-15). Hosonuma fails to teach a laminated film comprising the polarizing film described above with a retardation film having a slow axis in the MD direction, which comprises a long polymer film, wherein the MD direction of

the polarizing film corresponds to the MD direction of the retardation film, or that the laminated film is disposed outside of a liquid crystal cell of the liquid crystal display.

However, Yoshida teaches a laminated film comprising a polarizing film (162, [0437], Fig. 94) and a retardation film (168, [0436], Fig. 94) having a slow axis (phase-delay axis, [0177]) that is orthogonal to the absorption axis of the adjacent polarizing film (first polarizing element, [0177]), wherein the laminated film is disposed outside of a liquid crystal cell of the liquid crystal display (first and second polarizing elements on both sides of a liquid crystal panel of liquid crystal display, [0177]), for the purpose of obtaining improved viewing angle characteristics for the display ([0178]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a laminated film comprising a retardation film having a slow axis that is perpendicular to the absorption axis of the polarizing film of Hosonuma, wherein the MD direction of the polarizing film corresponds to the MD direction of the retardation film, being in the same laminated film, so that the slow axis of the retardation film is in the MD direction, being orthogonal to the absorption axis of the polarizing film which is in the TD direction, and to have disposed the laminated film outside of a liquid crystal cell in a liquid crystal display, in order to obtain the desired improvement in display viewing angle characteristics, as taught by Yoshida.

Regarding claim 9, Yoshida teaches that the retardation film comprises a uniaxially stretched film ([0437]), for the purpose of providing the desired retardation characteristics for improving the viewing angle as discussed above.

Regarding claim 10, Yoshida teaches that the retardation film comprises an optically uniaxial layer comprising a liquid crystal material ([0183]), for the purpose of providing the desired retardation characteristics for improving the viewing angle as discussed above.

Regarding claim 12, Yoshida teaches that the retardation film is a composite film comprising a birefringent layer provided on a birefringent polymer film (retardation films 61, 63 [0197], polarizing element 21, [0198], Fig. 22), for the purpose of providing the desired combination of retardation characteristics for improving the viewing angle as discussed above.

Regarding claim 16, Hosonuma teaches that the polarizing film is used in a liquid crystal display (column 1, lines 8-15). Hosonuma fails to teach that the polarizing film is disposed outside of a liquid crystal cell of the liquid crystal display.

However, Yoshida teaches that a polarizing film is disposed outside of a liquid crystal cell of the liquid crystal display (first and second polarizing elements on both sides of a liquid crystal panel of liquid crystal display, [0177]), for the purpose of providing the desired polarizing light.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have disposed the polarizing film of Hosonuma, outside of a liquid crystal cell of a liquid crystal display, in order to provide the desired polarized light, as taught by Yoshida.

6. Claims 8, 11, 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosonuma in view of as applied to claims 1, 3-7 above, and further in view of Abileah (US 5,907,378).

Hosonuma teaches the polarizing film discussed above. In addition, Hosonuma teaches that the polarizing film has a high degree of polarization (abstract).

Regarding claims 8, 17, Hosonuma teaches that the polarizing film is used in a liquid crystal display (column 1, lines 8-15). Hosonuma fails to teach a laminated film comprising the polarizing film described above with a retardation film having a slow axis in the MD direction, which comprises a long polymer film, wherein the MD direction of the polarizing film corresponds to the MD direction of the retardation film, let alone that it is disposed outside of a liquid crystal cell of the liquid crystal display.

However, Abileah teaches that a retardation film is provided in a laminated film comprising the polarizing film, outside of a liquid crystal cell (polarizer 1, retardation film 3, liquid crystal layer 5, column 33, lines 1-10, Fig. 41) of a liquid crystal display (column 32, lines 62-65), for the purpose of obtaining improved contrast ratios for the display (column 33, lines 30-35). Abileah teaches that the retardation film has a slow axis, or axis of retardation that is parallel to the transmission axis of the polarizing film (optical axis of each retardation film is oriented substantially parallel to the adjacent polarizer transmission axis, column 32, lines 39-42) which means that the slow axis of the retardation film is perpendicular to the absorption axis of the polarizing film.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a laminated film comprising a retardation

film having a slow axis that is perpendicular to the absorption axis of the polarizing film of Hosonuma, wherein the MD direction of the polarizing film corresponds to the MD direction of the retardation film, being in the same laminated film, so that the slow axis of the retardation film is in the MD direction, being perpendicular to the absorption axis of the polarizing film which is in the TD direction, and to have disposed the laminated film outside of a liquid crystal cell in a liquid crystal display, in order to provide the desired contrast ratios for the display, as taught by Abileah.

Regarding claim 11, Abileah teaches that the retardation film can comprise a birefringent layer comprising a non-liquid crystal material having a birefringence that is not lower than 0.005 (polyimide, delta n was between 0.02 and 0.03, column 35, lines 1-15), for the purpose of providing the desired retardation characteristics for improving the contrast ratio, as discussed above.

Regarding claims 13-14, Abileah teaches that the birefringent layer can comprise a polyimide (birefringent film, column 18, lines 55-58) which is a polymer that is inherently solid in the film form, for the purpose of providing the desired retardation characteristics for improving the contrast ratio, as discussed above.

Regarding claim 15, Abileah teaches that the birefringent layer can have a relationship $nx > ny > nz$ ($nx = 1.4305$, $ny = 1.4275$, $nz = 1.4261$, column 30, lines 60-65), for the purpose of providing the desired retardation characteristics for improving the contrast ratio, as discussed above.

Regarding claim 16, Hosonuma teaches that the polarizing film is used in a liquid crystal display (column 1, lines 8-15). Hosonuma fails to teach that the polarizing film is disposed outside of a liquid crystal cell of the liquid crystal display.

However, Abileah teaches that a polarizing film (column 26, lines 25-35) is disposed outside of a liquid crystal cell (column 26, lines 17-20, display has at its rear, a linear polarizer, column 26, lines 25=27) of a liquid crystal display (column 26, lines 14-16), for the purpose of providing the desired polarized light.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have disposed the polarizing film of Hosonuma, outside of a liquid crystal cell of a liquid crystal display, in order to provide the desired polarized light, as taught by Abileah.

Response to Arguments

7. Applicant's arguments directed toward the amended claims have been considered but are moot in view of the new ground(s) of rejection. For the record, Applicant’s remarks dated Applicant’s arguments directed toward the valid use of Abileah as a secondary reference are addressed below for the purposes of advancing prosecution.

8. Applicant argues that Abileah teaches that the axis with the largest index of refraction, or nx of each retardation film is oriented substantially parallel to the adjacent

polarizer transmission axis, and that the axis with the largest index of refraction [is not] a "slow axis".

Applicant is respectfully directed to the evidentiary reference “Birefringence Measurement” by Dr. Theodore Oakberg, which teaches that the axis with the largest index of refraction is called the "slow axis" of the retardation film (If nx < ny, then the x axis is called the "fast axis" and the y axis is called the "slow axis”, first page). Thus, the retardation film of Abileah does have a slow axis that is parallel to the transmission axis of the polarizing film, which means that when Hosonuma is modified by Abileah with the lamination of a retardation film to the polarizing film of Hosonuma, the slow axis of the retardation film is parallel to the transmission axis of the polarizing film, which is in the MD direction of the polarizing film of Hosonuma, the absorption axis being in the TD direction, for the purpose of providing the desired contrast ratios for the display, as motivated by Abileah.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon/

Sow-Fun Hon

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794